# LIGHTS THE LAMPS

## The New Switching Apparatus for Chicago Telephones.

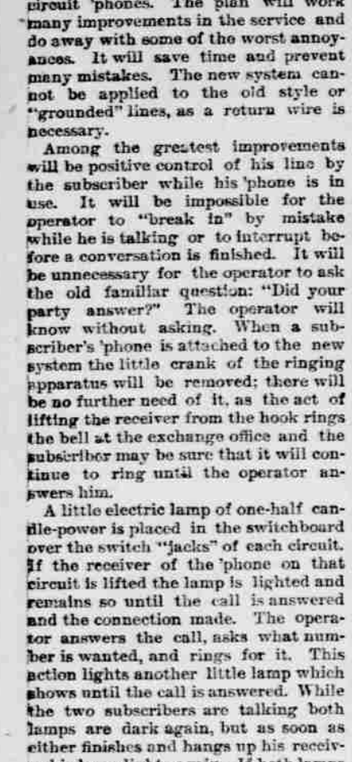
### Light Signals Take the Place of Sound, Greatly to the Convenience of Patrons of the Talking Machines—How the System Works.

The Chicago Telephone company is now installing what is known as the "Express" system of switching apparatus in connection with all metallic circuit 'phones. The plan will work many improvements in the service and do away with some of the worst annoyances. It will save time and prevent many mistakes. The new system cannot be applied to the old style or "grounded" lines, as a return wire is necessary.

Among the greatest improvements will be positive control of his line by the subscriber while his 'phone is in use. It will be impossible for the operator to "break in" by mistake while he is talking or to interrupt before a conversation is finished. It will be unnecessary for the operator to ask the old familiar question: "Did your party answer?" The operator will know without asking. When a subscriber's 'phone is attached to the new system the little crank of the ringing apparatus will be removed; there will be no further need of it, as the act of lifting the receiver from the hook rings the bell at the exchange office and the subscriber may be sure that it will continue to ring until the operator answers him.

A little electric lamp of one-half candle-power is placed in the switchboard over the switch "jacks" of each circuit. If the receiver of the 'phone on that circuit is lifted the lamp is lighted and remains so until the call is answered and the connection made. The operator answers the call, asks what number is wanted, and rings for it. This action lights another little lamp which shows until the call is answered. While the two subscribers are talking both lamps are dark again, but as soon as either finishes and hangs up his receiver his lamp lights again. If both lamps are lighted the operator knows the conversation is finished and she pulls the plugs and breaks the circuit. As long as either of the lamps burns she knows the wire is "busy" and will not "break in" or allow anyone else to made connection on that circuit. She does not need to listen or to ask questions. The service signals are "visible" instead of "oral."

The signal lamps are in absolute control of the subscriber alone. He can



OPERATOR'S SWITCHBOARD.

light it or put it out by simply lifting the receiver or replacing it on the hook. If the subscriber wishes to attract the attention of the operator for any purpose, instead of ringing his bell he simply moves the receiver hook up and down rapidly several times, thus causing the little lamp to flash before the operator's eyes.

There will be no "ringing up" or "ringing off." The lifting or replacing of the receiver does it all. In the application of the system to the subscribers of the main office a new designation of the lines will be made in the directory. All lines connected with the "Express" system will be known as "Main—Express No. —." When the new service is extended to the branch offices, which will be done as soon as possible, they will be designated in the same manner as, for instance, "Oakland—Express No. —." The new system is not the invention of anyone in particular, but was the outgrowth of many improvements in switch boards. "Visible" signals were first tried with success in San Francisco and the idea has been elaborated until its present application for the first time on a large scale.

The new switch boards are being placed as rapidly as possible in the main office. The one shown in the cut is such as will be used by one operator controlling one hundred wires. The managers say the service will be one-third more rapid and that mistakes in connections will be almost impossible.

### Complete Change of Theory.

A quarter of a century ago fever patients were treated in a way that at present seems little less than barbarous. They could get no water either by entreaty or strategy, and were frequently almost starved, on the theory that a fever must never be fed. Nowadays eminent medical men give fever patients eggs, chops, beef and other articles. In short, they feed them on the dishes they most liked when in health. Enormous quantities of water are given and baths as well, with a much larger percentage of recoveries.

### Rapid Movements in Insects.

The rapidity with which certain species of insects move is something truly astonishing. The common house fly is known to make 600 strokes per second with his wings and the dragon fly 1,500. In the case of the fly the 600 strokes causes an advance movement of 27 feet. These are figures on ordinary flight, and it is believed that the fly is capable of increasing both the strokes and advance movement sevenfold.

## GOETHE'S PROPHECY.

### The German Poet Foresaw the Building of the Isthmian Canal.

In a recent issue of the Overland Monthly a remarkable prophecy concerning the Nicaragua canal is recalled. It was made by the poet Goethe, and is chronicled in his "Conversations with Echermann and Soreh," (pp. 222-223). The authors say that on February 21, 1827, while at dinner, the illustrious German began to talk of Humboldt's scheme for piercing the Ishmus, and delivered himself as follows:

"I should wonder if the United States were to let an opportunity escape of getting such a work into their own hands. It may be foreseen that this young state, with its decided predilection to the west, will in thirty or forty years have occupied and peopled the large tract of land beyond the Rocky moun-

JOHANN WOLFGANG GOETHE.

tains. It may furthermore be foreseen that along the whole coast of the Pacific ocean, where nature has already formed the most capacious and secure harbors, important commercial towns will gradually arise for the furtherance of intercourse between China and the East Indies and the United States. In such a case it would not only be desirable, but almost necessary, that a more rapid communication should be maintained between the eastern and the western shores of North America, both by merchant ships and men-of-war, than has hitherto been possible with the tedious, disagreeable and expensive voyage around Cape Horn.

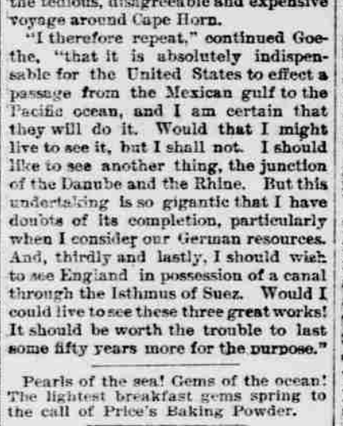
"I therefore repeat," continued Goethe, "that it is absolutely indispensable for the United States to effect a passage from the Mexican gulf to the Pacific ocean, and I am certain that they will do it. Would that I might live to see it, but I shall not. I should like to see another thing, the junction of the Danube and the Rhine. But this undertaking is so gigantic that I have doubts of its completion, particularly when I consider our German resources. And, thirdly and lastly, I should wish to see England in possession of a canal through the Isthmus of Suez. Would I could live to see these three great works! It should be worth the trouble to last some fifty years more for the purpose."



## RAISED BY A DERRICK.

### How a New York Cart Horse Was Saved from Drowning.

A big black horse belonging to William Aiken, No. 2 Coenties slip, New York, and driven by William Wilson, fell overboard from pier No. 4 East river the other afternoon. The slip was full of canal boats laid up for the winter, and the horse started to swim out into the river. The driver swam after it and brought it back, while



THE HORSE RAISED BY A DERRICK.

other men hastily constructed a raft of some timber floating in the slip.

The attempt to get the horse on the raft was unsuccessful, and when the men gave up in despair the horse struck out for himself. He swam under pier No. 2 and made his way inshore to shallow water.

A derrick was rigged on the dock and ropes were tied around the horse. Then ready hands seized the ropes, and the animal was raised twenty feet and swung around to the street. He was not badly injured.

During the excitement two of the big crowd of spectators leaned too far out from the dock in order not to miss a single detail of the scene, and fell with a splash into the water. The crowd yelled with laughter, while policemen threw them a rope. When pulled out they refused to give their names.

—Philadelphia's boast that she is the city of homes and not of tenements, sounds odd in the face of some facts related in Gabriel Thomas' book, published in 1697, when the city was not yet twenty years old. Gabriel called his work "An Historical Description of the Province of Pennsylvania, including an Account of the City of Philadelphia." He affirms the houses of Philadelphia were "stately and of brick, generally three stories high, after the mode of London, and as many as several families in each." This seems to indicate that Philadelphia had the apartment-house system nearly two hundred years ago.



# LEFT BY LIGHTNING

## Paints Its Own Photograph on the Side of a House.

### An Electric Discharge Leaves a Clear Track Behind It, for the Benefit of the Scientific World, as It Would Seem.

Few natural phenomena are so difficult to observe as lightning. The distant flash is now often recorded by photography, but what happens in the immediate vicinity of a destructive discharge is not generally known. If there are witnesses they are dazzled and deafened, and their impressions are often confused in the highest degree. Hence, scientific men are always glad when a discharge leaves its tracks behind it, and it is rare that discharges are so clearly left as in a case described and illustrated in Cosmos, Paris, November 17, whose account is translated below:

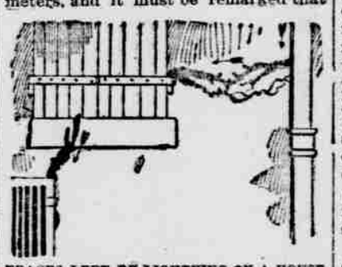
"On this date (July 22, 1894) a series of thunderstorms occurred in the west of France, in Belgium, and even in Holland. About eleven o'clock at night one of these was raging over the city of Niort, when a violent clap of thunder was heard, and the lightning struck the house 60 Avenue de Paris. The electric fluid first struck the chimney, then, descending along the roof, it tore off and threw to the ground a great number of tiles. This done, it reached the water pipe and followed it till within about five feet of the ground. At this point the phenomenon changed all at once; the electrical discharge left the pipe, jumped across to the iron hinge of a window-shutter, reached the fastening, on which there are traces of fusion, and then descended to the grating that protected a cellar-window.

"To make its path incontestable it left its trace on the wall, which had been recently painted a yellowish white. The next day it was seen that the track of the electricity over the paint had turned brown, as the photograph shows.

"We are, then, in the presence of a positive and undeniable record. It remains to explain the facts.

"M. Sieur, professor of the college of Niort, to whose courtesy we owe this interesting photograph, thinks that the fluid, finding in the water pipe an insufficient outlet to the ground, divided, and that one part directed itself toward the hinges of the shutter in order to reach the ground by the cellar. This explanation, though it seems very natural, is not in our opinion the most probable. The gratings, the hinges and the fastenings of the shutter form a mass of metal large enough to assume by induction a high electric potential. The difference of potential between the hinge and the water pipe at the moment of the lightning stroke would have been sufficient to overcome the resistance of the intervening space, producing a discharge. It is, in fact, very remarkable that the design of the spark, as the photograph shows it, changes in character about the middle of the surface in masonry.

"At the right the lightning is very much divided, and its different threads diverge sufficiently to occupy a breadth of about twenty centimeters (about seven inches). At the left, on the contrary, the bundle is compressed; the maximum spread is scarcely ten centimeters, and it must be remarked that



TRACES LEFT BY LIGHTNING ON A HOUSE AT NIORT, FRANCE.

in this part of its path, as far as the ground, the spark is condensed.

"Whether our explanation be true or not, the fact is very interesting, and it is fortunate for science that there was found on the spot an intelligent man, thanks to whom specialists have an accurate record to study."

### Pins for Insect Collections.

It may not be generally known that the nature of the pins used in fastening the specimens in collections of insects is a matter of great importance. Ordinary brass pins, even when well tinned, are very liable to oxidize in the body of the insect, and often thus destroy rare and valuable specimens. Black varnished pins are almost as bad, as the glaze soon cracks, leaving the metal exposed. Even plated pins do not appear to resist the action of the compounds developed in the body of the insect, though solid silver ones will, so that cheap silver may at least be a boon to the entomologists. A bronze pin has found favor of late, but is far from being a perfect fastener. The latest thing is a nickel alloy, which possesses decided advantages of the common kind whose basis is brass.



**Irene made no reply. She knelt down beside her friend and embraced her lovingly and then left her.**

**At length the welcome sound of carriage wheels greeted the mother's ear, and a moment later she was clasped in her son's arms. Even then his eyes wandered around the room.**

**"Irene, mother!"**

**"She went to change her dress. You will not let her see, Guy, that you feel any alteration in her face. It was to save your mother's life that she gave her own beauty."**

### Taking Chances.

**Brown—Hear about that burglary in Smith's? They must have been a desperate set of fellows.**

**Mrs. Brown—What did they do?**

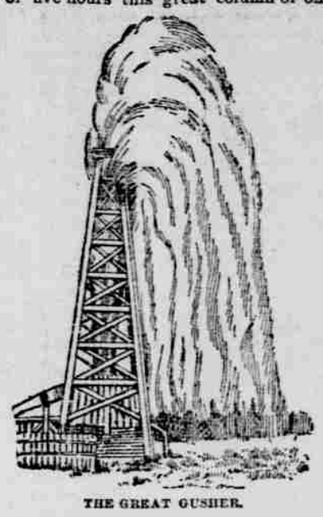
**Brown—Made their way into the kitchen and ate some of Miss Smith's**

## GIGANTIC OIL GEYSER.

### Flowed Fourteen and a Half Million Gallons in a Day.

The Kirkbridge No. 1 oil well, of which we give an illustration, is located in Madison township, Sandusky county, O. The flow of oil commenced November 18. The spectacle is described as one of the most magnificent ever witnessed in that part of the country. First appeared a column of water 8 or 10 feet in the air. This was followed by a black stream of mud and sand, which gradually changed to yellow. Then, with a deafening roar, the gas burst forth in an immense volume, hiding the derrick from view.

As this cleared away a solid golden column a foot in diameter shot from the derrick floor 100 feet in the air, there breaking into fragments and falling in a shower of yellow rain for a quarter of a mile around. For a period of five hours this great column of oil



THE GREAT GUSHER.

shot upward. In a very few moments the field about the well was covered several inches deep with petroleum. Within three or four hours the ditches for miles around were overflowing with oil. Dams were constructed in order that the product might be estimated, but these were overflowed and swept away as rapidly as built. Some persons living in the vicinity, alarmed at the spectacle, packed their household goods and fled. The Buckeye pumping station, a mile distant, was compelled to extinguish its fires on account of the gas, and all other fires within the district were put out.

It was a literal flood of oil, the estimated production for the first twenty-four hours being 14,560,000 gallons. About 13,000 barrels per day have been saved and marketed since the oil has been brought under full control. The owner has refused an offer of $500,000 for the well, being content with the income of $10,000 per day.

## OYSTERS IN AFRICA.

### Four Hundred of the Bivalves Survived the Trip to Cape Town.

"The consignment of one thousand oysters, which arrived by the Athenian recently, are destined for Salt river. They were sent out to the order of James Searle, of Port Elizabeth, who intended locating them in the Zwartkops river, but owing to the unsatisfactory results of the experiment made by the government in that stream he changed his mind, and generously offered them to the agricultural department," says the Cape News. "The beds where these exiled natives are to be deposited are situated a few hundred yards from the mouth of the river, where hospitals, or ambulances, as they are sometimes called, have been specially constructed for their reception, consisting of wooden frames fitted with galvanized wire, and so arranged as to furnish adequate protection from the attacks of a predatory enemy.

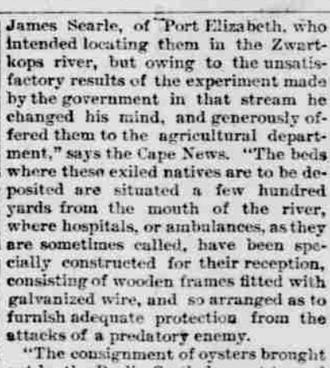
"The consignment of oysters brought out by the Roslin Castle has not turned out so successfully as was at first anticipated. On careful examination it was found that of the one thousand oysters imported by last vessel to the order of the government, only between three and four hundred had survived the climatic changes incidental to a long sea voyage, added to the novel conditions of life in a tank. Last year two thousand oysters were brought out under the care of an expert, and of these, it seems, only one hundred and fifty were lost on the outward run. The survivors were planted in the Zwartkops river, and of these only four hundred are now alive. The acclimatization of oysters in South Africa evidently requires great patience, as well as the highest skill."

### Two Rich Gold Districts.

The Witwatersrand district in South Africa is about fifty miles long and produces about one hundred and forty million dollars' worth of gold every year. The four square miles comprising Cripple Creek's producing area make up the richest tract of gold-yielding ground of the western continent.



### LOOKED THAT WAY.



Little Willie—Are you tongue tied? Featherstone—Of course not, Willie. What makes you think so? Willie—Sister says she has been waiting for months for you to speak.—

# THIRD OF THE LINE

## Now in Command of the North Atlantic Squadron.

### As Gallant an Officer as Ever Wore Uncle Sam's Uniform—For Eighteen Years the Admiral Has Been Actually at Sea.

Rear Admiral Richard Worsam Meade, whose flag is flying on board the United States steamship New York, the flagship of the North Atlantic squadron, will be shortly in command of the most important and powerful fleet of vessels that has been gathered together under our flag since the war of the rebellion. And since the rejuvenation of the American navy, adds Harper's Weekly, no squadron of evolution has had such an opportunity for experiment and instruction at sea as that which will be under his orders.

Richard Worsam Meade, third, comes of an ancestry that has been identified with the founding of the country and the furtherance of its prosperity as a nation. He was born in New York city on October 9, 1837, at the residence of his maternal grandfather, Judge Henry Meigs, and is the eldest son of the late Capt. Richard Worsam Meade, second, of the United States navy.

In October, 1850, at the age of thirteen, the present admiral was appointed midshipman from the First district of California, and during his term at the naval academy he made his first practice cruise in the United States steamer John Hancock and the sloop of war Preble. Then, under Commodores Morgan and Stringham, he made cruises in the steam-frigate San Jacinto in the Mediterranean, being transferred in 1853 to the sloop of war St. Louis.

In 1856 Midshipman Meade was graduated fifth in a class originally fifty-three in number. After leaving the academy he was ordered to the European squadron, and afterwards made a cruise among the West Indies in the steam frigate Merrimac. At the age of nineteen he was appointed acting master and navigating officer and ordered to the Cumberland, the flagship of Commodore Conover, who was in command of a squadron on the west coast of Africa. The young officer was promoted to be master in January, 1858, and the same month received his commission as lieutenant, being at the time but little over twenty years of age. Then in succession he served on board the United States ship Dale, the steam frigate Saranac, on the Pacific squadron, and the sloop of war Cyane. On the outbreak of the civil war Lieut. Meade applied at once for duty against the public enemy on the Atlantic coast.

Returning when yet ill of a fever contracted in a Mexican harbor, he was assigned to duty as instructor in gunnery to volunteer officers on board the United States receiving ship Ohio, at Boston. During the three months that he held this position he had as members of his class of fifty Acting Master James R. Wheeler and Eben M. Stoddard. These were the men who commanded the 11-inch pivot guns of the Kearsarge when she sunk the Alabama. Active service followed the second year in the war on the steam sloop Dacotah, of the North Atlantic blockading squadron, as executive officer of the United States steamer Conemaugh for three months during the summer. He was commissioned a lieutenant commander in July of the same year. During this period he participated in several affairs with the confederate batteries on the Vernon river. In the fall of 1862 Commander Meade was appointed to the command of the ironclad Louisville, of the Mississippi squadron (under Rear Admiral C. H. Davis, and afterward under Rear Admiral Porter), and was active in the events on the river between Memphis,

REAR ADMIRAL R. W. MEADE.

Tenn., and Helena, Ark. Highly commended in official dispatches, he was invalided home late in the winter, and assumed the duties of an inspector of ordnance in the ports of New York and Boston. With health restored, he was ordered to the command of the steamer United States, and afterwards commanded the naval battalion in New York during the July riots. Appointed to the command of the steam gunboat Marblehead, he was commended for gallantry in the affairs on the Stone river, and from that time to the close of the war he was actively in command, and served with bravery and distinction in the gulf and along the Atlantic seaboard. Since the war Admiral Meade's sea service has been great. He made a cruise of 421 days at sea in the United States steamer Narragansett, covering nearly 60,000 miles, and a cruise of thirty-nine months as captain of the Vandalia. His services at Annapolis as commandant of the navy yard at Washington were of great importance to the rebuilding of the navy. During this latter period the steel plant and gun foundry were begun and finished. The great brick ship Illinois at the Columbian exposition was Admiral Meade's idea, and he is to be credited for its successful completion. On May 5, 1892, he was commissioned commodore, and September 7, 1894, was promoted to be rear admiral. Admiral Meade has been eighteen years actually at sea, and in command for twelve years of this period.

# HON. THOMAS G. ALVORD.

Hon. Thomas G. Alvord, ex-Speaker of the New York assembly, ex-Lieutenant Governor, First Vice-president of Constitutional convention and a member of the former consilutional convention, is a man universally known and respected. Although ex-Governor Alvord is nearly1 ninety years of age he is still hale and hearty, and, as was tested in the constitutional convention last summer, in as perfect mental condition as is that grand old man, Mr. Gladstone.

"Do you never feel tired and literally worn out, Governor?" was recently asked him.

"Several years ago for the first time in my life I did feel in that condition. I was then a member of the assembly at Albany. It took the form of a most disagreeable nausea, and, of course, prostration which such attacks occasion. By sheer force of will power I seemed to overcome the first attack, but the year following it again came on with even more violence than before."

"What were your symptoms, Governor?"

"I felt a sense of weight and fullness in the lower part of the body, followed by a dull throbbing pain and accompanied with a sensation of feverish heat or a chilly shudder."

"You must have suffered considerable. But was that all?"

"At times the fever seemed to establish itself and then all the symptoms of a general reaction would come on. I suffered from general weakness, and an effort to move my limbs or body was attended with a feeling of weariness and exhaustion. In fact, my whole organism seemed to be giving out. I was unable to obtain relief except by lying flat on my back, and even this relief was only temporary."

"But how comes it that you are now in such good health?"

"Listen and I will tell you. I determined to take my case into my own hands, and therefore began using a remedy of which I had heard a great deal. It benefitted me at once, and I continued its use until I am completely restored to health, and kept in good physical condition, and all through the use of Warner's Safe Cure."

"Your experience, Governor, is certainly a most important and valuable one?"

"Yes, indeed, and I am satisfied that for physical ailments, and especially those incident to declining years, there is nothing equal to Warner's Safe Cure, and certainly I am a good living example of what it can do."

All who know Governor Alvord need not be told that his statements are reliable and his experience valuable. As such they are given herewith for the benefit of those men or women who may be suffering and who desire health and long life.

## A COURAGEOUS DUDE.

### But His Valor Only Came After Its Object Had Vanished.

He was a magnificent specimen of a Drexel boulevard dudelet and was suffering from the effect of too many lemonades. With a companion of the same species he boarded a Cottage Grove car just as the theater crowd filled it. A large, good-humored mother, with an interesting daughter and a small, dyspeptic son, entered also. The ladies got a seat on one side of the car and the male portion of the family rested his personality in a grudging way on a few inches of seat right opposite.

The dudelets aforementioned took up a position opposite the matron and her daughter, the hero of the lemonade debauch hanging himself up to a strap as limp as a washrag and about as intellectual-looking. He swayed to and fro as the car dragged its slow way along until at last he almost fell on the lady. Then he straightened up and began to exchange "cracks" in questionable taste with his comrade. The little man, seeing his mother surrounded by profanity and in imminent danger of being crushed by the dissipated youth hanging perpendicularly to the strap, grew red and redder. Finally the limp youth fell over on the lady, and then the little man's wrath bubbled over. Jumping up he grabbed the offender around his waist, and throwing him viciously in a heap into the seat he had just vacated, blurted out angrily:

"Sit there, you drunken brute."

The young man who had been thus roughly handled fell in a heap where he had been thrown and lapsed into, or seemed to lapse into, a sudden slumber. A few blocks further on the matron, the daughter and the heroic son left the car. Hardly had they vanished before the limp young man shook himself together, glanced swiftly around the car, and then shouted fiercely.

"Say, where's the gezer what threw me down? I can lick him. I wouldn't stand such treatment from any man. What! has he gone?" Then, turning to his chum, said: "Say, Billy, honest, did he throw me down or did I fall?"

"He threw you," retorted Billy, contemptuously.

"Has he gone certain?" asked the other.

"Yes, he's gone," replied Billy, with curling lip.

"Well, perhaps it's better he has," returned the other, reflectively. "I could have licked him easy, and I will when I catch him alone, but what could a fellow do when he had his mother and sister along. Three to one don't go, but I can lick that gezer," and then the conductor came along and said: "Say, young feller, if yer don't stop yer shouting I'll put yer off," and the ill-starred youth said not another word from that time on.—Chicago Times.

## TELEPATHY AMONG INSECTS.

### Some Remarkable Instances of a Highly Developed Sixth Sense.

Can it be that bugs are endowed with a wonderful sixth sense? Prof. C. V. Riley thinks he has discovered satisfactory evidence of telepathy among insects—that is to say, a sixth sense by which they are able to communicate ideas from one to another at great distances. The power, as illustrated in the case about to be mentioned, evidently depends not upon sight or smell or hearing. The fact that man is able to transmit sound by telegraph almost instantaneously around the globe may suggest something of this subtle power, even though it furnishes no explanation thereof.

Once upon a time Prof. Riley had two ailanthus trees in his front yard. They suggested to him the idea of obtaining from Japan some eggs of the ailanthus silkworm. He got a few and hatched them, rearing the larvæ and watching anxiously for the appearance of the moths from the cocoons. He put one of the moths in a little wicker cage and hung it up out of doors on one of the ailanthus trees. This was a female moth. On the same evening he took a male moth to a cemetery a mile and a half away and let him loose, having previously tied a silk thread around the base of his abdomen to secure subsequent identification. Prof. Riley's purpose in this performance was to find out if the young male and the female moth would come together for the purpose of mating, they being in all probability the only insects of their species within a distance of hundreds of miles, excepting only the others possessed by Prof. Riley himself. This power of locating each other had previously been remarked in these insects. In this case sure enough the male was found with the captive female the next morning. The latter had been able to attract the former from a distance of a mile and a half.

Concerning the ordinary senses of insects comparatively little is known. Most of them certainly see well, the eyes of many species being far more elaborate than those of human beings. The eyes of common house flies and dragon flies are believed to be better fitted than the human eye for observing objects in motion, though those creatures are short-sighted. It may reasonably be supposed that insects possess taste, judging from the discrimination which they exercise in the choice of their food. That they have smell is a matter of common observation, and has been experimentally proved by Sir John Lubbock and others. Most insects seem to be deaf to the sounds which are heard by human beings. At the same time there is no question that they produce sounds and hear sounds that are entirely beyond our own range of auditory perception. Sir John Lubbock has said that we can no more form an idea of these sounds than we should have been able to conceive a notion of red or green if the human race had been blind. The air is doubtless often vocal with the sounds made by insects of so high a pitch as to be entirely out of range of man's power to hear.—Washington Star.

### Incomplete Information.

Mr. Snaggs (looking up from his newspaper)—You know Mrs. Spiffins, didn't you?

Mrs. Snaggs—Yes; what of her?

"She was buried this afternoon."

"Mrs. Spiffins buried! Why, is she dead?"

"The paper doesn't say!"—Pittsburg Chronicle-Telegraph.

Inquisitive Friend—I suppose you wouldn't be defending that bank robber if you thought he really took the money?

Bright Lawyer—I wouldn't be defending him if I didn't think he took enough to pay my bill.—N. Y. Herald.